

DOCKETED

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Dept. of Housing and Community Development Comments

Additional submitted attachment is included below.

**DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
DIVISION OF CODES AND STANDARDS
STATE HOUSING LAW PROGRAM**

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February 22, 2018

VIA email <https://efiling.energy.ca.gov/EComment/EComment.aspx?docketnumber=17-BSTD-02>
California Energy Commission
Building Energy Efficiency Program
1516 Ninth Street
Sacramento, CA 95814

Dear Lead Commissioner for Efficiency and Energy Commission Staff:

**RE: Docket #: 17-BSTD-02
2019 Title 24, Part 6, Building Energy Efficiency Standards Rulemaking**

Thank you for the opportunity to comment on the California Energy Commission's proposed building standards for the 2019 California Building Energy Efficiency Standards (2019 California Energy Code). We hope that these comments will help the code user interpret and enforce the California Building Standards Code, including the 2019 California Energy Code.

The Department of Housing and Community Development (HCD) is responsible for reviewing proposals for the adoption of building standards for residential structures, which include low-rise residential, high-rise residential and hotels/motels. HCD has reviewed the proposed 45-Day Express Terms (ET) for the 2019 Energy Code and has the following comments and recommendations:

1. 45-Day ET 2019 Standards Chapter 1-100 TN#222168, Sections 100.0(a)(3)(c) and 100.0(e)(2)(D)(ii)(b)

These sections are existing exceptions to the performance or prescriptive requirements for low-rise residential buildings, specifically buildings heated with wood heaters or another nonmechanical heating system and that use no energy obtained from depletable sources for lighting or water heating.

The 2019 proposal deletes these exceptions from the referenced sections implying that the excepted structures will be subject to performance or prescriptive methods of compliance.

The State Housing Law, specifically Health and Safety Code Section 17958.2, provides for the construction of residential structures identified as Limited-Density Owner-Built Rural dwellings in cities/counties specifically adopting ordinances or regulations allowing these structures.

Title 25, California Code of Regulations, Division 1, Chapter 1, Subchapter 1, Article 8, Section 78 provides the following definition for “Limited density, rural dwelling:

A “limited density, rural dwelling” is any structure consisting of one or more habitable rooms intended or designed to be occupied by one family with facilities for living and sleeping, with use restricted to rural areas that fulfill the requirements of this article.

Section 126 of Title 25 also provides for these structures to deviate from the Building Standards Code:

Section 126. Technical Codes to Be a Basis of Approval

Except as otherwise required by this article, dwellings and appurtenant structures constructed pursuant to this part need not conform with the construction requirements prescribed by the latest applicable editions of the Uniform Building, Plumbing, and Mechanical Codes, the National Electrical Code, or other applicable technical codes; however, it is not the intent of this section to disregard nationally accepted technical and scientific principles relating to design, materials, methods of construction, and structural requirements for the erection and construction of dwelling and appurtenant structures as are contained in the uniform technical codes. Such codes shall be a basis for approval.

In order to accommodate the variability in construction methods and materials for limited-density rural residential dwellings, HCD has incorporated many exceptions throughout the California Building Standards Code. A fairly comprehensive exception is in the 2016 California Residential Code, Section R301.1.1.1 (attached) which will be carried forward into the 2019 California Residential Code.

These sections should be clarified on whether the proposed deletion of Section 100.0(a)(3)(c) will subject limited-density owner-built rural residential structures to the performance or prescriptive requirements of the 2019 Energy Code. Clarification would also be appreciated in the 2019 Residential Compliance Manual.

2. 45-Day ET 2019 Standards Chapter 1-100 TN#222168, Section 100.1

This section includes definitions for “habitable space” and “occupiable space” which reference spaces as “occupied occasionally and for short periods of time.” Occasional occupancy and short periods of time are relative terms and may be

subject to different interpretations. The California Building Code defines “habitable space” and “occupiable space” without reference to degree or time occupied. As part of the California Building Standards Code, these terms should be consistent for code user interpretations.

3. **45-Day ET 2019 Standards Chapter 2-110 TN#222173, Section 110.5**
This section seems to allow any natural gas system fireplace to be installed if it does not have a continuously burning pilot light. It does not correlate with HCD requirements in CALGreen that mandate direct-vent sealed gas fireplaces.
4. **45-Day ET 2019 Standards Chapter 2-110 TN#222173, Section 110.10(b)(1)**
This section proposes a definition for “Potential Solar Zone Area.” For consistency with code format, this definition should also be included in Section 100.1(b) Definitions.
5. **45-Day ET 2019 Standards Chapter 2-110 TN#222173, Section 110.12**
This is a new section addressing mandatory requirements for demand management. The leading sentence for this section states, “Buildings, other than healthcare facilities, shall comply with the applicable requirements of Sections 110.12(a) through 110.12(d).” It is implied that this section applies to all buildings, without exception. Is this the intent of this section?
6. **45-Day ET 2019 Standards Chapter 3-120 TN#222169, Section 120.1(b)(1)(C); and Section 120.1(c)**
These sections require high-rise residential buildings and hotels/motels with mechanical space conditioning systems supplying air to occupiable spaces through ductwork have air filters two or more inches in depth and to have a designated efficiency equal to or greater than MERV 13.

HCD questions whether the requirement to specify a thickness is necessary given that a specific filtration efficiency is also required.

In addition, HCD has noted in a letter dated August 8, 2017, public comments on this proposal have ranged from full support of a MERV 13 requirement (and possibly to MERV 16) to concerns with availability of gas furnaces with the capacity to handle the increased static pressure associated with MERV 13 filters. In addition, these proposals for increased filter efficiency also need to address any increased costs resulting from requirements to upgrade HVAC systems in order to effectively use MERV 13 filters. Additionally, a substantial difference exists between new construction and existing dwellings units that may be subject to these proposals; the costs to existing units should be separately identified.

7. **45-Day ET 2019 Standards Chapter 3-120 TN#222169, multifamily dwellings**
Section 120.1(b)(2)(A)(v) refers to “multifamily attached dwelling units” which is a term not used in the other building standards. Is this a different structure from the the “attached dwelling units” referenced in Section 120.1(b)(2)?

8. **45-Day ET 2019 Standards Chapter 4-130 TN#222170, Section 130.2(b)(1)**
This section addresses maximum zonal lumens for Backlight, Uplight and Glare (BUG) for nonresidential, high-rise residential and hotel/motel buildings. This section also provides a reference to Title 24, Part 11 (CALGreen), Section 5.106 for compliance.

It should be noted that Section 5.106 is adopted by the California Building Standards Commission and is not applicable to residential structures. The BUG parameters are included in CALGreen Section A4.106.10 Light pollution reduction, however, this is a voluntary section and not mandatory unless adopted by local agencies as applicable for their jurisdiction.

HCD recommends that high-rise residential and hotels/motels be exceptions to the requirements of Section 130.2 as referenced to CALGreen Section 5.106.

9. **45-Day ET 2019 Standards Chapter 5-140 TN#222171, Section 140.4(b)(2)**
This section addresses indoor design temperature and humidity conditions for high-rise residential and hotel/motel buildings and provides a reference to ASHRAE Standard 55 or the 2017 ASRAE Handbook, Fundamentals Volume. This section should be checked for conflict or duplication against building standards in the 2018 International Building Code, Chapter 12, which will be adopted as the 2019 California Building Code, for temperature control and equipment systems.
10. **45-Day ET 2019 Standards Chapter 7-150 TN#222176, Section 150.0(i)**
This section addresses a requirement for setback thermostats. Since Section 110.2(c) proposes that the setback thermostat apply to all heating or cooling systems, should “unitary” also be deleted from Section 150.0(i)?
11. **45-Day ET 2019 Standards Chapter 7-150 TN#222176, Section 150.0(k)(3)(B)**
This section specifies that low-rise residential building with four or more dwelling units comply with specified outdoor lighting requirements. Since the Energy Code does not define “multifamily,” does “multifamily” include 3 or more dwelling units as used in other parts of the Energy Code with the exception of this case?
12. **45-Day ET 2019 Standards Chapter 7-150 TN#222176, Section 150.0(m)(12)(B)(v) and 150.0((m)(12)(C)**
These sections require 2-inch filters for mechanical space conditioning systems and MERV 13 filters. See Comment #6 for Section 120.1(b)(1)(C) and Section 120.1(c).

13. **45-Day ET 2019 Standards Chapter 8-151 TN#222354, Section 150.1(c)(12)(A)**

This section addresses a prescriptive requirement for whole house fans in seven climate zones for both single-family and multifamily structures. The requirement for a whole house fan bringing in air directly from outdoors seems contradictory to the requirement for a MERV 13 filter for filtering contaminants.

14. **45-Day ET 2019 Standards Chapter 9-152 TN#222179, Section 150.2(b)1(H)(iii)(b)**

This section requires an altered or a single heat pump water heater to be offset by an additional photovoltaic system of 1kWdc. This section should include some consideration if a voluntary photovoltaic system has already been installed prior to the altered or replacement water heater. An additional 1kW should not be required depending on the size of the existing photovoltaic system.

15. **45-Day 2019 Joint Appendices TN#222210**

JA4.1.1 states: "The values in this appendix must be used for all residential and nonresidential prescriptive compliance calculations."

Table 4.3.11, Thermal Properties of Log Home Walls, provides U-factor and heat capacity requirements for logs at specified diameters. Since log homes may be a type of limited density, owner-built rural dwelling as discussed in Comment #1, owner-produced or used materials may be used for construction unless they are of insufficient strength or durability to perform the intended function. The thermal requirements of Table 4.3.11 may be contrary to the limited sound structural requirements for these structures per Chapter 1, Subchapter 1, Article 8, of Title 25, California Code of Regulations, commencing with Section 74. HCD recommends that the provisions for limited density, owner-built, rural dwellings be discussed in the Residential Compliance Manual to inform the code user of these types of dwellings and building code provisions.

Table 4.3.12, Thermal and Mass Properties of Straw Bale Walls, provides R-value, U-factor and heat capacity for strawbale construction. The description below the table indicates that the requirements may be optional. However, HCD adopted Appendix S Strawbale Construction in the 2016 California Residential Code. In fact, the 2018 International Residential Code (IRC), Appendix S, Section AS108, requires R-values of strawbales to be R-1.55 per inch of bale thickness with the bale laid flat; and R-1.85 per inch of bale thickness with the bale on edge. Since HCD will be adopting the 2018 IRC, these values should be compared with the values in Table 4.3.11 to verify whether they are consistent; or an acceptable higher optional standard for the 2019 codes.

16. Potential conflicts or duplication within the California Building Standards Code

The California Building Standards Law, specifically Health and Safety Code Section 18930(a), requires building standards to meet specified criteria for approval by the California Building Standards Commission. Section 18930(a)(1) requires that proposed building standards do not conflict with, overlap, or duplicate other building standards. Therefore, HCD recommends that the Energy Commission also evaluate building standards in the 2018 model codes (International Code Council Building, Residential and Existing Building Codes; and International Association of Plumbing and Mechanical Officials Uniform Plumbing and Mechanical Codes; National Fire Protection Association NPA 70) for possible conflicts in requirements. Some example sections that may have conflict or duplication with other codes include ventilation requirements proposed in Section 120.1(b)(2), opening sizes in Section 120.1(c)(2)(B), minimum ventilation rate in Table 120.1-B, indoor design conditions for temperature in Section 140.4(b)(2) and other sections noted, but not limited to, in this comment letter.

Please contact Emily Withers, Codes and Standards Administrator II, at (916) 263-2998 or at Emily.Withers@hcd.ca.gov if you have any questions related to our comments.

Sincerely,



Richard Weinert
Deputy Director

Attachment

CHAPTER 3 BUILDING PLANNING

SECTION R300 SITE DRAINAGE

R300.1 Storm water drainage and retention during construction. Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction in accordance with the California Green Building Standards Code, Chapter 4, Division 4.1.

R300.2 Grading and paving. Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings in accordance with the California Green Building Standards Code, Chapter 4, Division 4.1.

SECTION R301 DESIGN CRITERIA

R301.1 Application. Buildings and structures, and parts thereof, shall be constructed to safely support all loads, including dead loads, live loads, roof loads, flood loads, snow loads, wind loads and seismic loads as prescribed by this code. The construction of buildings and structures in accordance with the provisions of this code shall result in a system that provides a complete load path that meets the requirements for the transfer of loads from their point of origin through the load-resisting elements to the foundation. Buildings and structures constructed as prescribed by this code are deemed to comply with the requirements of this section.

Existing buildings housing existing protective social care homes or facilities established prior to 1972 (see Chapter 11 of the California Fire Code and the California Existing Building Code).

R301.1.1 Alternative provisions. As an alternative to the requirements in Section R301.1, the following standards are permitted subject to the limitations of this code and the limitations therein. Where engineered design is used in conjunction with these standards, the design shall comply with the California Building Code.

1. AF&PA *Wood Frame Construction Manual* (WFCM).
2. AISI *Standard for Cold-Formed Steel Framing—Prescriptive Method for One- and Two-Family Dwellings* (AISI S230).
3. ICC *Standard on the Design and Construction of Log Structures* (ICC 400).

R301.1.1.1 Alternative provisions for limited-density owner-built rural dwellings. The purpose of this subsection is to permit alternatives that provide minimum protection of life, limb, health, property, safety and

welfare of the general public and the owners and occupants of limited-density owner-built rural dwellings as defined in Chapter 2 of this code. For additional information see Chapter 1, Subchapter 1, Article 8, of Title 25, California Code of Regulations, commencing with Section 74.

To meet compliance with the requirements of this code, provisions of Section R301.1.1.1, Items 1 through 5 may be utilized for limited-density owner-built rural dwellings when the materials, methods of construction, or appliances are determined appropriate or suitable for their intended purpose by the local enforcing agency.

1. A limited-density owner-built rural dwelling may be of any type of construction which will provide for a sound structural condition. Structural hazards which result in an unsound condition and which may constitute a substandard building are delineated in Section 17920.3 of the Health and Safety Code.
2. There shall be no requirements for room dimensions as required in Chapter 3, provided there is adequate light and ventilation and means of egress.
3. There shall be no specified requirement for heating capacity or for temperature maintenance. The use of solid-fuel or solar heating devices shall be deemed as complying with the requirements of Chapter 3. If nonrenewable fuel is used in these dwellings, rooms so heated shall meet current installation standards.
4. Pier foundations, stone masonry footings and foundations, pressure-treated lumber, poles or equivalent foundation materials or designs may be used provided that bearing is sufficient.
5. Owner-produced or used materials and appliances may be utilized unless found not to be of sufficient strength or durability to perform the intended function. Owner-produced or used lumber, or shakes and shingles may be utilized unless found to contain dry rot, excessive splitting or other defects obviously rendering the material unfit in strength or durability for the intended purpose.

R301.1.2 Construction systems. The requirements of this code are based on platform and balloon-frame construction for light-frame buildings. The requirements for concrete and masonry buildings are based on a balloon framing system. Other framing systems must have equivalent detailing to ensure force transfer, continuity and compatible deformations.